



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/590,893

08/28/2006

Paul Gothard Knutson

PU030237

3761

24498

7590

07/17/2008

Joseph J. Laks

Thomson Licensing LLC

2 Independence Way, Patent Operations

PO Box 5312

PRINCETON, NJ 08543

EXAMINER

JAMAL, ALEXANDER

ART UNIT

PAPER NUMBER

2614

MAIL DATE

DELIVERY MODE

07/17/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,893	<b>Applicant(s)</b> KNUTSON ET AL.	
	<b>Examiner</b> ALEXANDER JAMAL	<b>Art Unit</b> 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Based upon the submitted amendment, the examiner notes that claims 1-3,5,9-14,16,18-26 have been amended.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-4,9-15,20-22** rejected under 35 U.S.C. 103(a) as being anticipated by Nyhart et al. (5553137).

As per **claims 1,12**, Nyhart discloses an acoustic echo canceller (Col 1 lines 21-40) that trains on 'non-training' audio. However, Nyhart does not specify the sampling rate of the audio signal in relation to the audio of the telephone functions

The examiner contends that it would have been obvious to one of ordinary skill in the art that any number of signaling frequencies could have been chosen for the telephone and audio signal used for training, or realize that the training could occur at a different clock rate than telephone signaling as a matter of design choice.

As per **claim 10**, it is rejected as per **claim 1**, Nyhart discloses that the dialing tones (preset signals that are used to notify of an event unrelated to training that are also used for training) (Col 1 lines 45-60).

As per **claims 2,13**, they are rejected as per claim 1.

As per **claims 3,11,14,22**, it may be audio.

As per **claims 4,15**, examiner reads any device that processes audio with acoustic echoes as a computer, portable computer, and a phone.

As per **claims 9,20**, the examiner contends that any initialization stage for a communications device would inherently comprise an indication to the training portion as to when to start (a number of training calls being reached) for the purpose of telling the training when to start.

4. **Claims 23-26,5,16,7,8,18,19**, rejected under 35 U.S.C. 103(a) as being unpatentable over Nyhart (5553137) as applied to claims 1,12.

As per **claim 23**, it is rejected as per the claim 1 rejection, however Nyhart doesn't disclose the specifics of the terminal where the echo canceller is implemented.

It would have been obvious to one of ordinary skill in the art at the time of this application that an echo canceller could be implemented on a phone (which is also a conferencing device) or computer with a known interface (USB, 1394) that produces the external audio signal for training for the purpose of removing echoes from those devices.

As per **claims 24-26**, they are rejected as per the claim 1 rejection.

As per **claims 5,16**, Nyhart discloses the audio training signal for the canceller which is digitally process. As such, the system inherently comprises an analog-to-digital converter, which will sample the training audio in the same microphone input that receives the telephone signaling (for a conferencing application for example). The ADC inherently comprises a 'sample rate converter' which will resample any input signal into the preset sampling rate (which will be the same as the telephone signaling (conferencing application)).

As per **claim 7,8,18,19**, examiner contends it would have been obvious to balance and manage the processor resources in a given system as necessary to perform the disclosed functions of communicating and echo cancelling.

Art Unit: 2614

5. **Claims 6,17** rejected under 35 U.S.C. 103(a) as being unpatentable over Nyhart (5553137) as applied to claims 1,12, and further in view of applicant's admitted prior art (spec).

As per **claims 6,17**, Nyhart's system comprises a speaker, and mic (fig. 1), but does not give specifics of the echo canceller.

Applicant's admitted prior art discloses well known adaptive filters used to perform the echo cancelling. The digital system inherently comprises means to delay all signals paths so as to synchronize the signals ( to give 'real time' bidirectional communication.) (spec pages 1 and 2). It would have been obvious to one of ordinary skill in the art at the time of this application to implement well known echo canceller features like a filter and delay means for the purpose of implementing the disclosed canceller.

### **Response to Arguments**

1. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

As per applicant's arguments that the prior art relied upon by the examiner (applicant's disclosed prior art) teaches away from the disclosed processor. The examiner maintains the 103 rejection and contends that one of ordinary skill would realize that prior art systems existed and could benefit from obvious combinations, such as the one with Nyhart.

As per applicant's arguments that examiner has not shown a citation in a reference for the inherent delay stages in the system. The examiner contends that it is well known to buffer and

Art Unit: 2614

delay processing stages in order to synchronize realtime bidirectional communication systems.

The examiner further notes that applicant has not disclosed the implementation specifics of any of the claimed device (such as lines of code for a dsp or actual circuit routing of the claimed device). The examiner contends it is well known how to implement functions and algorithms digitally, using processing, buffering and delay stages for the purpose of implementing the disclosed synchronized bidirectional communication systems.

As per applicant's argument that Nyhart's background section teaches away from applicant's claims, the examiner does understand applicant's argument and requests clarification. The examiner maintains that Nyhart reads on applicant's claims as per the above rejections.

As per applicant's argument that Nyhart's noise sequence is not a 'specially designed audio sequence' as recited in applicant's claims, the examiner disagrees.

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2614

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

/Alexander Jamal/

Primary Examiner, Art Unit 2614

Examiner Alexander Jamal

July 17, 2008